

**Staff Summary
Method 2B Application
BIOX Canada Ltd.
Corn Oil from Wet Distillers' Grains to Biodiesel Pathway
(BIOD030)**

Deemed Complete Date: June 17, 2015
Posted for Comment Date: August 7, 2015
Certified Date: August 18, 2015

Pathway Summary

BIOX Canada Ltd. (BIOX) uses corn oil from wet distillers' grains to produce biodiesel (BD) at its Oakville, Ontario plant. The plant produces approximately 15.3 million gallons of BD annually. The company has applied for a Low Carbon Fuel Standard (LCFS) Method 2B pathway for the fuel produced in this plant.

The feedstock is transported 190 miles by truck to the biodiesel plant. The biodiesel is transported 50 miles by truck to the rail yard and 2,500 miles by rail to California.

The plant's modified fatty acid methyl ester (FAME) transesterification process utilizes a co-solvent to increase the feedstock conversion rate. The co-solvent is recycled resulting in a consumption rate of less than 0.00075 gal per gal BD. This modified process can produce BD from both free fatty acids and triglycerides.

BIOX left most of the default input parameters unchanged in its CA-GREET analysis. Only the BD production energy consumption, the electrical generation energy mix, and the transportation distance parameters were changed.

Carbon Intensity of the Fuel Produced

The LCFS lookup table currently contains no pathway covering BD produced in Canada from corn oil from wet distillers' grains. Therefore, the BIOX pathway falls under the Method 2B provisions of the LCFS. Because BIOX's application was submitted under the Method 2B process, it is not subject to the substantiality requirements with which Method 2A applications must comply (a minimum improvement of five gCO₂e/MJ, and a minimum production volume of ten million gallons per year).

The proposed BIOX pathway CI is shown in the following table.

Proposed Lookup Table Entry

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity in gCO ₂ e/MJ		
			Direct Emissions	Land Use or other Indirect Effects	Total
Biodiesel	BIOD030	2B Application*: North American Corn Oil from Wet Distillers' Drains; Biodiesel Produced in Canada	35.23	0	35.23

*Specific Conditions Apply

Operating Conditions

Operations at the plant will be subject to the following conditions designed to ensure that the CI of the of the BD produced at the BIOX plant will remain at or below the value appearing in the following table for all volumes of BD sold in California:

- 1) Except for periods of abnormal operations, such as planned maintenance or unpredictable, unavoidable, and uncontrollable *force majeure* events, the total thermal and electrical energy use values specified in the BIOX application shall not be exceeded.
- 2) All gallons produced under all certified LCFS Method 2 pathways shall inherit the same CI increment from the consumption of process energy at the plant. The applicants may not allocate process energy CIs so as to reduce the total life cycle CI of some subset of the gallons produced (e.g., those being shipped to California) and increase the CI of the remaining gallons. An example of such a reallocation would be associating California-bound gallons with the consumption of biogas and non-California-bound gallons with the consumption of natural gas.

Staff Analysis and Recommendation

Staff has reviewed BIOX's Method 2B application, and finds the following:

- Staff has replicated, using the CA-GREET spreadsheet, the carbon intensity values calculated by the applicant; and
- Staff has concluded that the plant's actual energy consumption is not likely to exceed the energy consumption levels specified in BIOX's Method 2B application.

On the basis of these findings, staff recommends that BIOX's application for a Method 2B pathway be approved.